Remarks

A version of markings to show changes made is attached.

Claims 1 and 3 are rejected under 35 U.S.C. Section 102(b) as being anticipated by Kume et al. (U.S. Patent 5,111,107). The Examiner contends that Kume discloses a tension mask frame assembly for a CRT with a substantially rectangular mask support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other, having a pair of opposing long sides extending and parallel to the major axis and a pair of opposing short sides extending and parallel to the minor axis each side having an outer peripheral surface and an inner peripheral surface, a tension mask supported to the frame at an attachment point along a pair of opposing sides and a detensioning member fixed along the peripheral surface of at least one of the sides and having a second coefficient of thermal expansion. The Examiner further contends that Kume discloses the second coefficient of thermal expansion being relatively higher than the first coefficient.

Kume et al. discloses a plurality of grid elements 6 being attached to two support bars 1, 2 which constitute the long sides of the tension mask frame assembly. In contradistinction, the tension mask as recited in claim 1 of the present application is supported to the frame at an attachment point along a pair of said opposing sides. Kume does not teach nor suggest attaching the tension mask to the frame at an attachment point, but instead teaches attaching the mask along entire edges of the support bars which constitute sides of the support frame. Based upon these distinctions, the applicant asserts that claim 1 is not anticipated by Kume et al. and therefore claim 3 which depends from allowable claim 1 is also not anticipated by Kume et al. Reconsideration of claims 1 and 3 are respectfully requested.

Claims 1 and 2 are rejected under 35 U.S.C. Section 102(b) as being anticipated by Ragland, Jr. (U.S. Patent 5,932,957). The Examiner contends that Ragland, Jr. discloses a tension mask frame assembly for a CRT with a substantially rectangular support frame having a first coefficient of thermal expansion and including a central major axis and a central minor axis perpendicular to each other, having a pair of opposing long sides extending and parallel to the major axis and a pair of opposing short sides extending and parallel to the minor axis each side having an outer peripheral surface and an inner peripheral surface, a tension mask supported to the frame at an attachment point along a pair of opposing sides, and a detensioning member fixed along the peripheral surface of at least one of the sides and having a second coefficient of thermal expansion. The Examiner further contends that regarding claim 2, Ragland, Jr. discloses the second coefficient of thermal expansion being relatively lower than the first coefficient.

Applicant respectfully disagrees with the Examiner's assertion and characterization of the Ragland, Jr. reference. Ragland, Jr. teaches a threaded detensioning rod disposed through openings formed in legs of U-shaped resilient frame members. While Ragland, Jr. discloses a material for the detensioning rod as being CARTECH PYROMET ALLOY 882® it does not teach nor suggest the material of the support frame assembly or its coefficient of thermal expansion relative to the CARTECH PYROMET ALLOY 882® in order to achieve any certain deflection characteristics. Claim 1 of the present application requires that the substantially rectangular mask support frame have a first coefficient of thermal expansion while the detensioning member fixed along the peripheral surface of one of the sides has a second coefficient of thermal expansion in order to draw the attachment points toward each other during thermal cycling. Ragland, Jr. does not teach nor suggest the use of first and second coefficients of thermal expansion in the material in order to draw each of the sides towards each other during

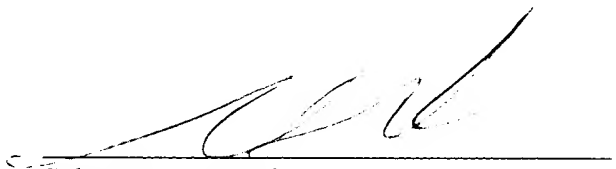
thermal cycling. Ragland, Jr. instead utilizes the detensioning rod with an unspecified thermal expansion coefficient relationship for detensioning. Reconsideration of the rejection of claims 1 and 2 under 35 U.S.C. Section 102(b) is therefore respectfully requested.

Claims 4 and 5 are rejected under 35 U.S.C. Section 103(a) as being unpatentable over Kume et al in view of Ragland, Jr. The Examiner contends that Kume discloses the claim limitations including a pair of blade members but fails to clearly point that the detensioning members fixed along an inner surface of the long sides and then proceeds to rely upon Ragland, Jr. for a disclosure of the detensioning member being fixed along an inner surface of the long sides. Claim 4 has been amended to clarify that the detensioning members are fixed along peripheral surfaces of the sides. Claim 4 requires that the coefficient of thermal expansion of said detensioning member is relatively greater than said first coefficient of thermal expansion fixed along the outer surface of said short side and the inner surface of said long sides, and said second coefficient of thermal expansion is relatively lower than said first coefficient of thermal expansion fixed along the inner surface of said short sides and said outer surface of said long sides. Ragland, Jr. only discloses a detensioning rod fixed along inner surfaces of the short sides as recited in Column 3 at lines 3-5. Ragland, Jr. in combination with Kume et al. does not teach nor suggest the second coefficient of thermal expansion being relatively greater than the first coefficient of thermal expansion fixed along the outer surface of the short side and the inner surface of said long sides and the second coefficient of thermal expansion being relatively lower than the first coefficient of thermal expansion when fixed along the inner surface of the short sides and the outer surface of the long sides. Additionally, the combination of Ragland, Jr. and Kume et al. do not teach nor suggest a continuous generally planar frame as recited in claim 4. Both references instead teach frames having non-planar U-shaped sides. Applicants therefore

contend that the Examiner has not made a prima facie case of obviousness and reconsideration of the rejection of these claims is therefore respectfully requested.

The applicant has added dependent claims 6-8 which depend from claim 1 and further recite patentable distinctions from the references of record. Applicants also have added a new claim set including claims 9-13 for examination. These claims are patentable because the references of record do not teach nor suggest the combination of a cathode ray tube which has a glass envelope, a phosphorous screen, an electron gun and a tension mask frame assembly having a substantially rectangular mask support frame with opposing long and short sides, a tension mask supported on the frame between a pair of mounting locations located on the opposing sides and a detensioning member fixed on a peripheral surface of one of the sides having a coefficient of thermal expansion which is different from the coefficient of thermal expansion of the frame whereby the mounting locations are drawn towards each other during thermal cycling.

Respectfully submitted,



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Version with Markings to Show Changes Made

4. In a cathode ray tube having a tension mask and frame assembly comprising:

a mask mounted in tension on a substantially rectangular frame, said frame having a first coefficient of thermal expansion and including a pair of opposing long sides and short sides disposed at generally a right angle with respect to the long sides with each of said sides connected to form a continuous generally planar frame having an inner and outer peripheral surface; and

[a] detensioning members having a second coefficient of thermal expansion fixed along the peripheral surfaces of [at least one of] said sides wherein said second coefficient of thermal expansion of said detensioning members is relatively greater than said first coefficient of thermal expansion fixed along the outer surface of said short sides and inner surface of said long sides, and said second coefficient of thermal expansion is relatively lower than said first coefficient of thermal expansion fixed along the inner surface of said short sides and said outer surface of said long sides.

5. The cathode ray tube of claim 4 wherein said frame includes a pair of support blade members, each of the support blade members having at least one generally central attachment point for attaching each of said support blade members to a pair of said opposing sides of said frame.

Please add the following new claims:

6. A tension mask support frame assembly of claim 1 wherein said opposing long and short sides lie in a frame plane.

7. The tension mask support frame assembly of claim 6 wherein the peripheral surface along which the detensioning member is fixed lies generally orthogonal to the frame plane.

8. The tension mask frame assembly of claim 7 wherein said frame includes a pair of support blade members, each support blade member having at least one generally central attachment point for attaching each of said support blade members to a pair of said opposing sides of said frame.

9. A cathode ray tube comprising:

a glass envelope having a rectangular faceplate panel and a tubular neck extending from the rectangular faceplate panel through a funnel;

a phosphor screen carried by an inner surface of the faceplate panel;

an electron gun centrally mounted within the tubular neck for generating and directing electron beams toward the phosphor screen; and,

a tension mask frame assembly mounted between the electron gun and the faceplate panel; the tension mask frame assembly having a substantially rectangular mask support frame formed of a pair of opposing long sides extending parallel to a major axis and a pair of opposing short sides connected between the long sides and extending parallel to a minor axis to form a planar rectangular mask support frame, a tension mask supported on said frame between a pair of mounting locations, each being located on one of said opposing sides, and, a detensioning member being fixed along a peripheral surface of at least one of said sides, said detensioning member having a coefficient of thermal expansion which is different from the

coefficient of thermal expansion of the frame whereby said mounting locations are drawn toward each other during thermal cycling of said mask frame assembly.

10. The cathode ray tube of claim 9 further comprising a pair of support blade members being mounted to said tension mask frame assembly at said mounting locations.

11. The cathode ray tube of claim 10 wherein said tension mask is fixed to said support blade members.

12. The cathode ray tube of claim 9 wherein the opposing long and short sides lie in a common plane.

13. The cathode ray tube of claim 12 wherein said detensioning member is fixed along a peripheral surface of one of said sides which is generally orthogonal to the common plane.